

REMARKS

Claims 11 and 15 are rejected under 35 USC §102(e) as being anticipated by Rumer (U.S. 2004/0238947 by Rumer et al.). Claims 1, 4-10, 16, 18 and 20 are rejected under 35 USC §103(a) as being unpatentable over Rumer in view of Tosaya (U.S. Patent 6,538,320 to Tosaya et al.). Claims 17 and 19 are rejected under 35 USC §103(a) as being unpatentable over Rumer in view of Tosaya as applied to claims 11 and 16, and further in view of Murayama (U.S. 2001/0009302 by Murayama et al.). Claims 14 and 37 are rejected under 35 USC §103(a) as being unpatentable over Rumer.

In response to the rejection of claims 11 and 15 as being anticipated by Rumer, Applicants have amended claim 11 to indicate that the foot portion extends from the top of the conductive lid to the substrate, and to further include an adhesive extending from the substrate into the through-hole. Applicants respectfully submit that Rumer fails to disclose or suggest an integrated circuit having a foot portion extending from the top of the conductive lid to the substrate, and an adhesive extending from the substrate into the through-hole. Applicants note that Rumer clearly teaches away from the use of an adhesive for attaching the lid to the substrate. In contrast to Applicants' claims, each embodiment of Rumer attaches the lid to the substrate by way of a fastener, such as a metal rivet.

The only use of an adhesive for attaching an element to the substrate is the use of an adhesive to attach a standoff to the substrate, as shown in Fig. 3 of Rumer. However, the adhesive of Rumer does not extend from the substrate into the through-hole of the lid. In particular, Rumer describes the problems with using an adhesive 110, stating it "may require additional curing steps" and that "sealant-adhesive 110 sometimes delaminates the surface of substrate 102." See Rumer at pp. 1-2, paragraph [0018]. Rumer offers its fastener solution as a replacement for adhesives, noting that the use of a fastener allows a package to "eliminate sealant-adhesive 110." See Rumer at p. 2, paragraph [0025]. Thus, Rumer clearly teaches away from an adhesive in pointing out the problems associated with the adhesive, and in describing a fastener as a superior alternative to an adhesive. Applicants respectfully submit that

claim 11 as amended clearly distinguishes over the references, and respectfully request reconsideration of claims 11 and 15 in view of the amendment to claim 11.

In response to the rejection of claims 1, 4-10, 16, 18 and 20 under 35 USC §103(a) as being unpatentable over Rumer in view of Tosaya, Applicants respectfully request reconsideration. Independent claim 1 is directed to a conductive lid having (i) a foot portion extending from the top of the conductive lid to a surface adapted to be coupled to a substrate of the integrated circuit, and (ii) a through-hole adapted to receive an adhesive to secure the conductive lid to the substrate. It is suggested in the Office Action that Rumer does not expressly teach an adhesive to secure the lid to the substrate, but that Fig. 4 of Tosaya discloses the use of an adhesive in a through-hole.

However, Rumer and Tosaya cannot be properly combined, and any valid combination of the references would not lead to Applicants' claims. Any combination of prior art references cannot change the principal operation of a reference. MPEP 2143.01. Fig. 2 of Rumer discloses a fastener 210 extending through a hole in the lid to secure the lid to the substrate. Applicants note that the fastener 210 occupies the hole, and therefore, the hole in the lid could not also receive an adhesive to secure the conductive lid to the substrate. While the embodiment of Fig. 2 of Rumer expressly teaches away from using any adhesive by teaching the use of a fastener, the fastener of the embodiment of Fig. 2 would need to be removed in order to allow the through-hole to receive an adhesive. Such a modification would clearly change the principal operation of the embodiment of Fig. 2, and would be improper.

Similarly, Fig. 3 of Rumer discloses a lid coupled to a standoff 301 which may be adhered to the substrate using an adhesive. A fastener 310 is inserted through holes of the lid and the standoff which are aligned. The embodiment of Fig. 3 of Rumer expressly teaches away from Applicants' claims by teaching the use of adhesive on a standoff, and coupling a lid to the standoff using a fastener. It would be necessary to remove the standoff and the fastener to allow the through-hole of the foot portion to receive an adhesive. However, such a modification would render the device unsatisfactory of its intended purpose, and therefore would be an improper combination of the references. In either embodiment, the through-hole of the foot

portion of the lid could not receive the adhesive as claimed by Applicants without changing the principal of operation of the lids. Moreover, as noted above, Rumer specifically teaches away from the use of an adhesive by noting problems associated with an adhesive, and offering the fastener as a superior alternative to an adhesive. Applicants respectfully submit that claim 1 as pending clearly distinguishes over any valid combination of the references, and request reconsideration of claim 1.

Applicants respectfully submit that dependent claims 4-10 are allowable over the combination of Rumer and Tosaya for the same reasons that independent claim 1 is believed allowable. Applicants have cancelled claims 16 and 18 in view of the amendment to claim 11. Applicants further submit that claim 20, which is directed to the use of an underfill, is also allowable over a combination of Rumer and Tosaya for the same reason that independent claim 11 is believed allowable. That is, any combination of Rumer and Tosaya fails to teach the use of an adhesive extending from a substrate into a through-hole without changing the principal of operation of Rumer.

In response to the rejection of claims 17 and 19 under 35 USC §103(a) as being unpatentable over Rumer in view of Tosaya as applied to claim 11 above, and further in view of Murayama (U.S. 2001/0009302 by Murayama et al.), Applicants respectfully submit that the claims are allowable over any combination of the references in view of the amendment to independent claim 11. While Murayama is cited for disclosing the use of an adhesive between the conductive lid and the die, Murayama fails to disclose or suggest the use of an adhesive extending from the substrate into the through-hole.

Finally, in response to the rejection of claims 14 and 37 under 35 USC §103(a) as being unpatentable over Rumer, Applicants respectfully submit that claims 14 and 37 are allowable over Rumer for the same reasons that independent claim 11 as amended is believed allowable.

CONCLUSION

Reconsideration and a notice of allowance are respectfully requested in view of the Amendments and Remarks presented above. If the Examiner has any questions or concerns, a telephone call to the undersigned is invited.

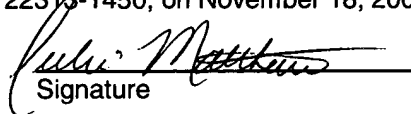
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on November 18, 2005.

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Name

  
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